

MATERIALS OPERATIONAL MEMORANDUMS

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3	DELETED (See Section 210.01)	HQ Materials Policy on Requirements for Materials Phase Reports
4	DELETED (See Section 250.00)	Preparing Materials Phase IV Foundation Investigation Report for Load Resistance Factor Design (LRFD) Method
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MATERIALS SECTION**MATERIALS OPERATIONAL MEMORANDUM NO. 8**

DATE OF ISSUE: April 17, 2006

SUBJECT: Pavement Seals

FOR THE SPECIAL ATTENTION OF: District Materials Engineers
District Project Development Engineers
Resident / Regional Engineers

DATE OF REVIEW: April 2007

The purpose of this memorandum is implementation of ITD's policy on sealcoats. To minimize our exposure and answer public concerns, restrictions on chip size and asphalt are instituted. This is a revision of the original memo dated December 12, 2003.

The following paragraph is added to Section 210.01 of the Materials Manual:

New asphalt pavements including overlays should not be sealed in the first 3 years following construction. No seal coats will be placed on new pavements unless written approval on a project specific basis is obtained from the Headquarters Materials Section.

In urban areas, plantmix seal, microsurfacing, or other high volume seal coating application other than chip seal should be used for roadways with ADT of 5000 vehicles per lane or greater.

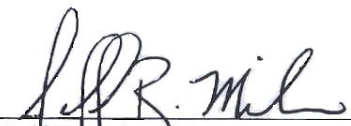
The following is added to Section 240.06 of the Materials Manual:

Chip seal applications shall consist of rubberized or polymerized emulsion and one sized chips. Chip gradation will be in accordance with Standard Specification Subsection 703.06.

Non-rubberized / non-polymerized emulsions are prohibited from use for chip sealing.

Pavement Preservation - Microsurfacing

Microsurfacing should be used when the pre-paving International Roughness Index (IRI) is 90 in/mile or less. Roadways not meeting this requirement should be ground for smoothness prior to microsurfacing. Microsurfacing may be used to fill areas that need to be leveled.


Jeff R. Miles, P.E.
Materials Engineer

MATERIALS SECTION**MATERIALS OPERATIONAL MEMORANDUM NO. 11**

DATE OF ISSUE: April 17, 2006

SUBJECT: Use of Geogrid for Pavement Base Reinforcement

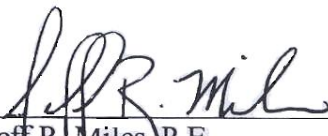
FOR THE SPECIAL ATTENTION OF: District Materials Engineers
District Project Development Engineers
Resident / Regional Engineers

DATE OF REVIEW: April 2007

The use of geogrid for pavement base reinforcement should be avoided except in some special situations where they may be needed to reduce the required pavement base thickness to avoid costly relocation of existing utilities or where there is not enough aggregate to construct a full depth pavement base. However, any uses of geogrid for pavement base reinforcement must be pre-approved by the Materials Engineer. If approved by HQ Materials, the geogrid will require FHWA sole source approval.

Geogrids still can be used in other applications, such as MSE wall backfill reinforcement, steepened slope reinforcement, subgrade improvement, embankment base reinforcement, etc. and their uses in these applications will not need pre-approval from the Materials Engineer or sole source approval.

This policy of restriction in use of geogrid for pavement base reinforcement will remain in effect until further notice.



Jeff R. Miles, P.E.
Materials Engineer

MATERIALS SECTION**MATERIALS OPERATIONAL MEMORANDUM NO. 12**

DATE OF ISSUE: Revised January 31, 2006

SUBJECT: Materials Source Programs

FOR THE SPECIAL ATTENTION OF: District Engineers
Assistant District Engineers
District Materials Engineers
District Business Managers
District Record Inspectors
Environmental
Headquarters Division Business Manager

DATE OF REVIEW: January 31, 2007

INTRODUCTION:

The purpose of the ITD Material Source Program is to proactively and aggressively manage ITD Material Sources. The goal of this program is to have long term, strategically located sources of high quality materials, including all required clearances, ready for use on construction and maintenance projects and in case of emergencies.

This goal can be accomplished through effective Asset Management of these very valuable resource properties. ITD is a major consumer of aggregate products. We consume a large quantity of aggregate material each year to meet the needs of construction and maintenance of the State Highway system. Demand varies per year based on the types of projects and on the project schedules. ITD owns or controls over 700 material sources around the state which, when combined with private and commercial aggregate suppliers, supply the materials needed for the numerous ITD construction projects.

In some areas of the state, there are no commercial or private sources of materials within miles of the highway projects. Without state owned or controlled sources of material, contractors would have no alternative but to haul materials needed for the project from distant sources adding substantial cost to the Department. In other areas where there are few commercial or private sources, the existence of a publicly controlled or owned material source can provide an option for contractors who do not control their own source of materials and who are interested in bidding on ITD projects. ITD sources are inventoried and evaluated to determine where the sources are located, what volume and quality of material is available and what environmental concerns may be encountered. When strategic materials sites are identified, ITD will work proactively to acquire these sites to supplement our aggregate assets or to replenish depleted sources in strategic locations.

The cost of acquiring new materials sources can be very high depending on the location of the site. Not only must we pay for the land, we also have investigation costs, which include land surveying, cultural resource clearance, and testing for material quality. To enable ITD to purchase materials sources, a source cost recovery fee will be assessed on materials used from existing sources. The fee will be placed in a fund administered by Headquarters Materials and distributed to the districts for source investigation and purchases.

The ITD Materials Source Program is outlined below:

SOURCE COST RECOVERY FEES:

Commencing January 31, 2006, the source cost recovery fees for ITD controlled materials sources will be:

- \$0.30 per cubic yard for withdrawal, for leased or Federal Government use permitted sources. This will be in addition to any royalty required by the underlying owner if any.
- \$0.98 per cubic yard for rural sources. This will be most of the sources ITD owns or controls.
- \$1.70 per cubic yard for sources in urban or recreational areas. This rate will be set on a source by source basis in conjunction with Headquarters Materials, based upon the cost to replace these sources. This rate is higher primarily because of the high real estate costs in these areas.

The ownership of sources by private individuals or industry in urban areas should be promoted. Potential source sites being considered for ITD ownership should be in “necessary, remote and strategic” locations. The new source cost recovery fee will apply to all ITD controlled materials sources and will be reviewed every 5 years. The source cost recovery fee shall be noted in the records of each source and be provided to the public upon request. The statewide source cost recovery fees shall be reviewed and updated by the State Materials Engineer every five years.

See example Note to the Contractor for addressing the source cost recovery fee in contracts.

SOURCE INVESTIGATION:

An amount of \$5000 per District will be reserved each state fiscal year for the investigation of potential material sources. These funds are to be used for the preliminary work associated with obtaining new materials only. Such work may include subsurface investigations and archeological clearances. In-house costs such as personnel and operating, future royalty payments and maintenance and/or security of current sources are not eligible for these funds.

At the beginning of the State Fiscal year, the Materials Engineer will send a written request to the Highway Division Business Manager to allocate the \$5000 Source Investigation funds to each District. The Highway Division Business Manager will allocate funds to the Materials Source Site Project Number.

When Source Investigation funds are used, the District will provide the following: Information of route and approximate milepost of the site, approximate acreage, anticipated scope of work, cost for each activity, and the invoice(s) for completed work. The District Materials Engineer will approve all payments and assure proper coding is applied to payment.

If the District has not designated the use of funds to Headquarters Materials by January 1 of each year by executing an option to buy or purchase agreement, the Materials Engineer may redistribute the funds on an as-needed basis to other Districts.

Monies from the source investigation program that have not been expended at the end of each state fiscal year will revert back to the Materials Source Fund. Funds for an approved executed option or purchase agreement will be re-distributed first to those purchases from the Materials Source Fund at the beginning of each fiscal year.

Should source investigation costs exceed \$5,000 the District Business Manager will provide a written quote, supplied from the vendor, to the Materials Engineer for approval to transfer additional funds to the district source investigation fund. Additional funds may be approved by the Materials Engineer if they are available.

Use of the materials source fund for purchase of stockpile sites will not be allowed.

Cultural Resource Clearance fees. A Cultural Resource Clearance is required by the State Historic Preservation Office (SHPO) for the use of material sources on Federal Aid projects. SHPO assesses ITD a fixed hourly rate for review of the archaeological report, and comments on the effect of the undertaking and determination for National Register eligibility. The funding of this charge falls into three categories:

1. If the source is associated with a Federal Aid project, the fee should be charged to the project.
2. When the District is interested in acquiring a source that is not associated with a project, the fee can be paid out of the Source Investigation Program.
3. For sources not associated with a Federal Aid project and the District does not intend to acquire, but use of the source on a project is in the best interest of the Department, the District shall pay the fee from the District Operating Budget. Private parties developing sources for commercial use or sources not desired for use by the Department should acquire SHPO approval on their own without the assistance of the Department.

The District Materials Engineer will submit the Cultural Resource Clearance to the Materials Engineer, with the appropriate justification and charge codes, for approval. If approved, the Materials Engineer will forward this request to Environmental Section for processing.

SOURCE PURCHASING:

Upon written approval by the Materials Engineer, potential source purchases shall be secured with an Option Agreement. The Option Agreement will authorize payment to the landowner of no more than \$5000 unless previously approved, and shall identify ITD as the sole purchaser for a minimum of two years. Negotiation of the purchase timing and price will occur during the two year time period. The Option Agreement shall be renewable for another two year time period at the sole discretion of ITD for no more than 150% of the original agreement price. The Option Agreement shall authorize ITD to undertake measures necessary for source approval including investigation, archeological clearance, etc. A signed copy of the Option Agreement shall be forwarded to the Materials Engineer with request for payment.

If the District has determined that a source is viable, the District will submit a written request with appropriate justification to the Materials Engineer. In-house costs such as personnel and operating, future royalty payments and maintenance and/or security of current sources are not eligible for these funds. As per the Materials Manual Section 270.03, the Source Request Package will include the following minimum items.

1. Materials Source Plat and Investigation Record
2. Reclamation Plan
3. Pertinent information as to the proven quantity and quality of material in the source and quantity of overburden to be removed.

4. A list of projects for which the materials are expected to be used and the quantities estimated based on the six-year plan.
5. A list of sources in the immediate area available to the Department and the quantities contained therein.
6. A sketch map showing location of all projects and sources mentioned in Items 4 and 5 above.
7. Market Value estimate from Right-Of-Way.
8. Cost Benefit Analysis, if required.
9. If this source was investigated using Source Investigation Program funds, provide these key and project numbers, and a history of the project.
10. Estimated timeline for completion of purchase.

The Materials Engineer will review the proposal and notify the District in writing if approved or denied. If approved, the District Business Manager will prepare a 2101 and forward a copy to the Materials Engineer. The Fund Code to be used on the 2101 for these funds is 81 (Land Purchase for Material Source). The Materials Engineer will forward the 2101 to the Highway Division Business Manager who will process the allotment transfer and will send copies to District Material Engineer, District Business Manager and Materials Engineer for their files.

The District Materials Engineer will approve all payments for purchase of site and assure proper coding is applied to payment. The District Materials Engineer will notify the Materials Engineer, in writing, of project completion and the final cost of project. The District Materials Engineer will de-obligate any unused funds back to Material Source Site Program.

The Materials Engineer will develop and maintain an expenditures database and coordinate expenditures with the Highway Division Business Manager. District Materials Engineers shall provide all receipts or reimbursements required for the expenditure of these funds. District Materials Engineer will approve all payments for purchase of sources, and assure proper coding is applied to payment.

The Materials Engineer, District Materials Engineers, District Business Managers and the Highway Division Business Manager will review the expenditures of this program semi-annually in January and June. Prior to the June review, the following information shall be provided to the Materials Engineer by the District Business Managers.

- For approved source site purchases that were not completed in the previous fiscal year, identify the dollar amount that has not been expended to date. This should not include any state forces work.
- For the next fiscal year, provide a list of any new purchases the District may be requesting and the anticipated dollar amount for these purchases.
- For anticipated source site investigations, indicate any funding in addition to the \$5000 the District may need.

The Materials Source Purchase Program will consist of a three year program. The third year out in the program is identified for Preliminary Development.

Recognizing that the availability of purchases may be difficult to schedule, source purchases that are listed in the program may be moved forward and executed at the discretion of the Materials Engineer.

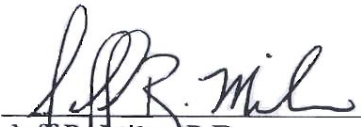
For ongoing projects that have not been completed, the unused balance will be carried over into the next fiscal year for completion of the purchase. Once the purchase has been completed, any unused funds will be de-obligated by the District Materials Engineer and will revert back to the Materials Source Program.

All materials source purchases should be programmed in the Source Purchasing Program. Other funds should not be used to purchase sites unless approved by the Materials Engineer and the Highway Division Business Manager. The purchase of land for the sole purpose of stockpiling existing materials will not be allowed in this program.

EXAMPLE

Note to the Contractor – Source Cost Recovery Fee

Effective January 15, 2006, the source cost recovery fee for state owned or controlled sources will be established on a source by source basis. Upon notification of the Contractor's intention to use a state owned or controlled source, the Engineer will require up to 14 calendar days to establish the source cost recovery fee if it has not been previously established for the proposed source.


Jeff R. Miles, P.E.
Materials Engineer

MATERIALS SECTION**MATERIALS OPERATIONAL MEMORANDUM NO. 13**

DATE OF ISSUE: April 28, 2005 (Revised November 2005)

SUBJECT: Guidelines for use of Reclaimed Asphalt Pavement (RAP)

FOR THE SPECIAL ATTENTION OF: Resident / Regional Engineers, District Materials Engineers

DATE OF REVIEW: November 2006

This memorandum is intended to augment the current Standard Specifications. Reclaimed Asphalt Pavement (RAP) is suitable for use on ITD projects when the following procedures are used. Implementation will be by contract Special Provisions or through the change order process for an existing contract.

GENERAL:

RAP stockpiles shall require approval as consisting of 100% reclaimed asphaltic material prior to use. The RAP stockpile(s) or a random truckload of RAP material will be inspected daily to confirm the existence of 100% reclaimed asphaltic material. Reclaimed asphaltic material shall be defined as salvaged bituminous material that may have minor coatings of dust or aggregate particles adherent from removing the paved material and no discernable seams, pockets, or amounts of base or soil.

Approval for use of RAP shall not waive hot plant air quality requirements.

Size of RAP material will be determined by visual inspection of the mix.

All RAP material shall be from previous State or Local Highway projects.

PLANTMIX:

Reclaimed asphalt pavement shall be reduced as needed to pass through the maximum nominal screen of material being produced prior to introduction to the mix. A portion of the test strip will include RAP at the proposed percentage.

Production gradation testing will not include testing of reclaimed asphaltic material except as described below.

Unless otherwise specified, RAP shall not be used on top lift of interstate paving.

A maximum of 15% reclaimed asphalt pavement (RAP) may be included as part of the job mix formula provided the mix meets all other requirements for plantmix.

RAP material is likely to possess adequate characteristics for many paving applications. The 15% limit is considered to represent no more variation in materials than would be found in virgin crushed materials and asphalt.

Additional testing and processing procedures shall include but may not be limited to:

The contractor shall provide a written narrative of the history of the salvaged material in the stockpile. The narrative shall certify the location the RAP was obtained from and shall discuss, to the best of the contractor's knowledge, the anticipated quality of the materials for plantmix, areas in the stockpile(s) of variations of materials, maintenance procedures used on the materials including chip seals, plantmix seals, crack sealants, etc. Test results of RAP material shall be correlated to identified areas of differing materials in the stockpile(s).

Evaluation of asphalt and aggregate properties of salvaged materials.

Selection of type and amount of recycling agent

USE OF RAP IN THE BASE LAYER:

Reclaimed asphalt pavement shall be reduced as needed to pass through a 1 inch screen prior to introduction to the mix.

Reclaimed asphalt pavement shall be mixed in approximately equal proportions with material meeting the requirements for aggregate base. The resultant mix of materials shall be of uniform consistency.

In place density testing shall be performed at the rate for Item 303 Aggregate Base using the following procedure:

The roller pattern shall be established by using in-place density from an uncorrected nuclear gauge. The required compaction is achieved and final process rolling is defined as when the final roller pass adds no more than 0.5 lb/ft^3 (8 kg/m^3) to the previous in-place density. Sufficient additional roller passes shall be made to determine that a "false break" or leveling-off point is not used for compaction density. The roller pattern shall be reestablished when mixture properties in the processed material change and at a minimum of every 7200 SY (6000 m^2) of finished surface for each lift. Additional tests shall be performed where soil conditions have changed or at the discretion of the Engineer to ensure that the required compaction is achieved.

USE OF RAP IN THE SUBBASE LAYER:

Reclaimed asphalt pavement shall be reduced as needed to pass through a 3 inch screen prior to introduction to the mix.

Reclaimed asphalt pavement shall be mixed in approximately equal proportions with material meeting the requirements for granular subbase. The resultant mix of materials shall be of uniform consistency.

RAP stockpiles contaminated with base aggregate materials may be approved for use with subbase provided the contaminating material is suitable as determined by the Engineer.

In place density testing shall be performed at the rate for Item 301 Granular Subbase using the same procedure as described above for the aggregate base layer.

USE OF RAP AS BORROW OR GRANULAR BORROW:

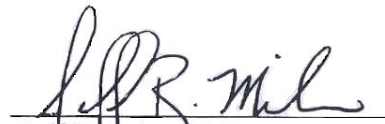
Reclaimed asphalt pavement shall be reduced to approximately 6 inch minus as determined by visual inspection of the Engineer prior to mixing with borrow materials.

Reclaimed asphalt pavement shall be mixed in approximately equal proportions with borrow or granular borrow. The resultant mix of materials shall be of uniform consistency.

RAP stockpiles contaminated with base aggregate materials or soil may be approved for use with borrow or granular borrow provided the contaminating material is suitable as determined by the Engineer.

In place density testing shall be performed at the rate for Item 205 Granular Borrow using the same procedure as described above for the aggregate base layer.

Direct any questions to the HQ Materials Project Development Engineer or the Pavement Design Engineer.


Jeff R. Miles, P.E.
Materials Engineer